

## CLAIMS

1. A container for liquid or pulverulent contents,  
5 comprising

walls (12, 14; 12', 14'; 112, 114) which are inter-  
connected to form a closed compartment (40; 140), two  
opposing side walls (12; 12'; 112) being joined along a  
common connecting portion (20; 20'; 120),

10 said container having a duct means (16; 16'; 116)  
which is formed between the two side walls (12; 12'; 112)  
and extends from the compartment (40; 140) to the outside  
of the container (10; 10'; 110), characterised  
in that

15 the walls are flexible so that the volume of the  
compartment is dependent on the relative position of  
the walls (12, 14; 12', 14'; 112, 114) and

the duct means has a flexible wall having a uniform  
composition of materials along its entire length, and  
20 is sealed when the container is in an empty state before  
filling.

2. A container as claimed in claim 1, wherein the  
compartment (40; 140) in the empty state of the container  
before filling is sterile.

25 3. A container as claimed in claim 1 or 2, where-  
in the duct means on its inside comprises a heat sealable  
material.

30 4. A container as claimed in <sup>claim 1</sup> ~~any one of claims 1-3~~,  
wherein the wall of the duct means is made of the same  
material as the container side walls (12; 12'; 112).

5. A container as claimed in <sup>claim 1</sup> ~~any one of claims 1-4~~,  
wherein the terminal edge (18) of the duct means (16;  
16') is sealed by the internal surfaces of the duct means  
(16; 16') being welded together.

35 6. A container as claimed in claim 5, which is empty  
and in flat state.

26

7. A container as claimed in <sup>claim 1</sup> ~~any one of the preceding~~ claims, which has a carrying means (30) which has an opening area (32) arranged in the connecting portion (20; 20').

8. A container as claimed in <sup>claim 1</sup> ~~any one of the preceding~~ claims, wherein the two side walls (12; 12') in a bottom area (42) are interconnected via a bottom wall (14; 14'), the compartment (40) of the container (10; 10') being defined by the side walls (12; 12') and the bottom wall (14; 14'), and the duct means (16; 16') preferably being arranged on the opposite side of the container (10; 10') in relation to the bottom wall (14; 14').

9. A container as claimed in claim 8, wherein the connecting portion (20; 20') on two opposite sides of the compartment (40) has boundary lines (28), which are directed to the compartment and which in a central area (44) adjoining the bottom area (42) extend in parallel from the bottom wall (14; 14') and, in an arched area (46) adjoining the central area (44), extend arcuately towards each other to the duct means (16; 16').

10. A container as claimed in <sup>claim 1</sup> ~~any one of preceding~~ claims, wherein the duct means (16') is integrated with the container side walls (12').

11. A container as claimed in <sup>claim 1</sup> ~~any one of claims 1-9~~, wherein the duct means (16; 116) is designed as a separate piece inserted between the side walls (12; 112) and extends transversely of the connecting portion (20; 120).

12. A container as claimed in claim 11, wherein the duct means (116) extends a distance inwards from the connecting portion (120), the side walls (112) comprising a projecting portion (113), which surrounds the duct means (116) and in which the connecting portion (120) on each side of the duct means (116) has a curved portion (122) and an edge portion (124) extending from the curved portion (122) in parallel with the duct means (116).

13. A ~~container as~~ claimed in claim 12, wherein the inner end (117) of the duct means (116) is sealed.

14. A method of making a container (10; 10') for liquid or pulverulent contents, in which at least two flexible walls (12; 12') are interconnected to form a closed compartment (40), characterised by the steps of

making the container before filling thereof,

forming a duct means (16, 16') between two opposing side walls (12; 12') so that the duct means (16, 16') extends from the compartment (40) to the outside of the container (10, 10'),

joining the side walls (12; 12') along a connecting portion (20; 20'), and

sealing the duct means (16; 16').

15. A method as claimed in claim 14, wherein the duct means (16; 16') is designed so as to extend a distance away from the upper edge of the container (10; 10').

16. A method as claimed in claim 14 ~~or 15~~, wherein the container (10; 10') is sterilised.

17. A method as claimed in <sup>claim 14</sup> ~~any one of claims 14-16~~, wherein the duct means (16') is integrated with the container side walls (12').

18. A method as claimed in <sup>claim 14</sup> ~~any one of claims 14-16~~, wherein the duct means (16) is formed as a separate piece, which is inserted between the side walls (12) of the container.

19. A method as claimed in claim 18, wherein the step of forming the duct means (16) between the side walls (12) is preceded by the step of separating the side walls (12).

20. A method as claimed in claim 18 ~~or 19~~, wherein the duct means (16) is inserted between the side walls (12) while the container (10) and the duct means (16) are being advanced in a common direction of travel.

10-02-2000

28

*claim 18**a*

21. A method as claimed in ~~any one of claims 18-20~~,  
wherein a plurality of containers (10) are made and  
advanced in a web (210), a plurality of duct means (16)  
being supplied to the web (210) to be arranged between  
5 the side walls of the containers (10) in the web (210).

22. A device for making a container (10; 10') for  
liquid or pulverulent contents, having at least two flex-  
ible opposing side walls (12; 12') which are intercon-  
nected along a connecting portion (20; 20') to form a  
10 closed compartment (40), characterised by an  
assembly station (240) which is adapted to form a duct  
means (16; 16') between the side walls (12; 12') in such  
manner that the duct means extends from the compartment  
(40) to the outside of the container (10; 10'), and com-  
15 prises

a first connecting device (270) to join the two side  
walls (12; 12') along the connecting portion (20, 20'),  
and

a second connecting device (280), which is adapted  
20 to seal the duct means (16, 16').

23. A device as claimed in claim 22, wherein the  
assembly station (240) is adapted to integrate the duct  
means (16') with the side walls (12') of the container  
(10').

24. A device as claimed in claim 22, wherein the  
assembly station (240) comprises an insertion device  
(250) for inserting the duct means (16) as a separate  
piece between the two opposing side walls (12).

25. A device as claimed in claim 24, wherein the  
assembly station (240) further comprises a separating  
30 device (260) for separating the side walls (12) when  
inserting the duct means (16).

26. A method of filling a container (10; 10') with  
liquid or pulverulent contents, said container comprising  
35 walls (12, 14; 12', 14'; 112, 114) which are inter-  
connected to form a closed compartment (40; 140), two  
opposing side walls (12; 12'; 112) being joined along a

common connecting portion (20; 20'; 120), said walls being flexible so that the volume of the compartment is dependent on the relative position of the walls (12, 14; 12', 14'; 112, 114)

5        said container having a duct means (16; 16'; 116) which is formed between the two side walls (12; 12'; 112) and extends from the compartment (40; 140) to the outside of the container (10; 10'; 110), the duct means having a flexible wall with a uniform composition of materials  
10        along its entire length, and is sealed when the container is in an empty state before filling,

          c h a r a c t e r i s e d    by the steps of  
          opening from outside, by cutting or the like, the sealed duct means (16; 16') of the container (10; 10'),  
15        inserting a filling nozzle (325) in the duct means (16; 16'), and

          introducing, through the filling nozzle (325), the contents into the container (10; 10') while simultaneously increasing the volume of the compartment (40) by separating the walls.  
20

          27. A method as claimed in claim 26, wherein a filling duct (315), which is connected to filling nozzle (325), is opened in a throttle portion (322), which is included in the duct (315) and in which the duct (315)  
25        comprises a deformable tube (320), by a squeezing means (330), which acts on the sides of the tube (120), being moved from a squeezing position to begin the filling operation, the duct (315) being closed by the squeezing means (330) being returned to the squeezing position to  
30        terminate the filling operation.

          28. A method as claimed in claim 27, wherein the amount of liquid with which the container (10; 10') is being filled, is measured, the measuring operation beginning when the duct (315) is opened, and the duct (315)  
35        being closed in response to a predetermined amount being measured.

10'-02-2000

30

29. A device for filling a container (10; 10') with liquid or pulverulent contents, said container comprising walls (12, 14; 12', 14'; 112, 114) which are interconnected to form a closed compartment (40; 140), two  
5 opposing side walls (12; 12'; 112) being joined along a common connecting portion (20; 20'; 120), said walls being flexible so that the volume of the compartment is dependent on the relative position of the walls (12, 14; 12', 14'; 112, 114)

10 said container having a duct means (16; 16'; 116) which is formed between the two side walls (12; 12'; 112) and extends from the compartment (40; 140) to the outside of the container (10; 10'; 110), the duct means having a flexible wall with a uniform composition of materials  
15 along its entire length, and is sealed when the container is in an empty state before filling,

c h a r a c t e r i s e d   b y

an opening means (370), which by cutting or the like is adapted to open the sealed duct means (16; 16') of the  
20 container (10; 10') and

a filling nozzle (325), which arranged in the end of the filling duct (315) and has a tapering end portion (326) which is elongate in cross-section, to be inserted into the duct means (16; 16') after opening thereof.

25 30. A device as claimed in claim 29, wherein the filling nozzle (325) is made of an elastic material, preferably plastic.

a 31. A device as claimed in claim 29 ~~or 30~~, wherein the filling nozzle (325) in the end portion (326) has an  
30 elongate outlet (327) with opposing edge portions (328), which preferably engage each other to seal the outlet (327) in the absence of application of outer forces.

32. A device as claimed in <sup>claim 29</sup> ~~any one of claims 29-31~~,  
a which comprises a chamber (360), which surrounds the end  
35 portion (326) of the filling nozzle (325) and has an enclosing means (364) for the duct means and a gas inlet

(366), to ensure an aseptic clean environment in the chamber (360) when filling the container (10; 10').

a 33. A device as claimed in <sup>claim 29</sup> ~~any one of claims 29-32~~, wherein the filling duct (315) comprises a throttle portion (322) for controlling a flow of liquid through the filling duct (315), the throttle portion (322) comprising a deformable tube (320), and a squeezing means (330) which is adapted to act on the sides of the tube (320) being arranged along the tube (320).

a 10 34. A container as claimed in <sup>claim 1</sup> ~~any one of claims 1-13~~, which is filled with liquid or pulverulent contents by using a method as claimed in <sup>claim 26</sup> ~~any one of claims 26-28~~.

a 15 35. A container as claimed in <sup>claim 1</sup> ~~any one of claims 1-13~~, which is filled with liquid or pulverulent contents by means of a device as claimed in <sup>claim 29</sup> ~~any one of claims 29-33~~.